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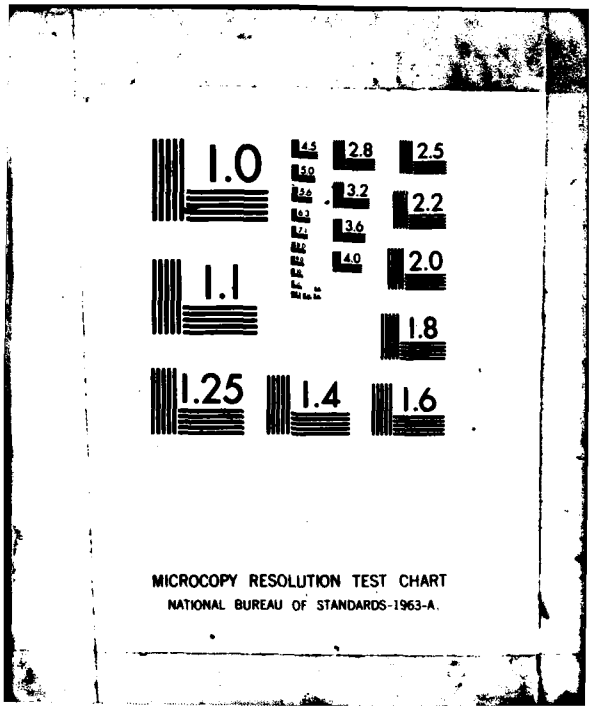
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The essay critiques current doctrine, training and evaluation pertaining to the TOW weapons system. Doctrine for employment is examined in both offensive and defensive modes and ARTEP deficiences are identified. It is the premise of the essay that TOW employment is not sound and recommended solutions are presented which address employment doctrine, command and control and evaluate techniques.

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US ARMY WAR COLLEGE

INDIVIDUAL RESEARCH BASED ESSAY

TOW DOCTRINAL DEFICIENCIES

BY

LIEUTENANT COLONEL RICHARD E. DAVIS

16 APRIL 1982

INTRODUCTION

A general description of a modern conventional battlefield includes such descriptors as mobile, heavily armored, and highly lethal. Such a battlefield envisages massed armored and mechanized formations. In response to this obvious battlefield requirement to kill massed armor at extended ranges, a heavy anti-tank (AT) weapon designated TOW (tube launched, optically tracked, wire command link guided missile) entered the US Army inventory in the 1960s. Effective at three times the range of previous AT weapons, the TOW represented a significant improvement in the ability of infantry and armor units to kill opposing armor at extended ranges. In fact, some precision guided munition (PGM) advocates predicted the demise of tanks in the face of the technological advances made in anti-tank missiles. Though such claims were at least premature and probably gross exaggerations, they did demonstrate the tremendous capability of such weapons.

Following introduction of the new system, US Army literature suggested guidelines for employment that would maximize the system's capabilities. TC 7-24 states the following principles to be followed to defeat enemy armor:

> First, take measures to optimize the fires of your anti-armor weapons against the enemy. This means you must ensure the comprehensive and coordinated employment of all your anti-armor weapons in depth throughout the battle area, to engage the enemy from the front, flanks and rear. Second, you must protect your own forces from anti-armor fire. This is best accomplished by the skilled use of terrain for cover and concealment, the use of suppressive fires against the enemy's

weapons, and the proper use of maneuver to degrade the effectiveness and lessen the accuracy of the enemy's weapons and target acquisition equipment.[1]

The logic of these principles is obvious. However, the fact is that current doctrine, training and evaluation do not support these principles. We speak of "optimizing" and "coordinating fires," but in fact our literature advises decentralized control of TOWs which not only complicates coordination of long range fires but actually militates against it; the result of decentralized employment is often a haphazard scattering of assets around the battlefield which actually hinders fire coordination. Additionally, decentralized employment practically guarantees piecemeal employment — the antithesis of "optimizing fires." We talk of "skillful maneuver," but the current ARTEP examines movement in only a cursory manner; leaders are not specifically evaluated on their maneuver planning and execution of AT elements after they fire or on echeloning AT sections to the rear or forward in order to provide overwatching fires.[2] In reality, the near perfect hit probability (.95)[3] of the TOW weapons system is totally irrelevant if its tactical employment is not sound, and it is the premise of this paper that current TOW employment is not sound.

The principal reason for the doctrinal deficiencies that will be cited is the fact that little significantly new doctrine has been developed for the TOW. By and large we are still using 106RR doctrine. When the TOW was substituted for the 106mm recoiless rifle in TOEs, the term "TOW" was merely substituted for "106RR" in the literature. A comparison of 106RR and TOW doctrine reveals little difference except for indications of the increased range of the TOW. The doctrinal void that is now present has prevented exploitation of the capability inherent in the TOW system and will, in my opinion, place in great jeopardy the

success of Army units confronted by massed enemy armor formations.

It is the thesis of this paper that because of deficiencies in TOW doctrine, the weapon system's effectiveness against enemy armor will be significantly degraded. The paper's purpose is to critique current doctrine, training and evaluation. Solutions to identified problems will be suggested with the objective being to maximize weapon system capability.

The opinions expressed in this paper are the result of experiences as commander of a mechanized infantry battalion in Germany. Organic to the battalion were twenty one improved TOW vehicles (ITV). During the command tour, it became obvious to me that serious deficiencies existed in TOW doctrine. The explanation of these shortcomings and suggested "fixes" are intended to assist other mechanized and armor commanders in training and successfully employing TOW units. Additionally, the recommendations are appropriate for inclusion in future doctrinal literature. The discussion will assume system employment in Central Europe because that is the most logical location of a future conventional war involving massed armor and a requirement for effective long range anti-tank fires.

DOCTRINE

As stated previously, a problem existing with literature addressing TOW employment is the fact that it is almost identical to that of the 106RR. The 106 was a fine weapon in its day, but with a range of one third the TOW, logic dictates differences in employment. Unfortunately such is not the case today.

Current doctrine suggests two methods of employing TOW sections — centralized under the task force commander and decentralized under the

control of the company team commander. The latter is stated as the "normal" method of employment.[4] This decentralized concept is the prevailing "school solution" in both the Infantry and Armor School advance courses; captains are advised to attach or OPCON TOW sections to companies in both offense and defense. Rarely is a situation discussed which advocates centralized control and then only in very general terms.

In my opinion, this "approved solution" is a prescription for degrading the effectiveness of the TOW system and a certain way to lose an armored battle. Here's why. The current team commander is presented with an array of short, intermediate and long range direct fire weapons to employ. These include small arms, light and heavy machine guns, LAW, dragons, tank guns and TOW; add to this the team commander's responsibility for indirect fire -- organic mortars, battalion mortars and artillery -- and you have an overburdened commander. In short, the team commander is overwhelmed with planning before a fight starts, and execution of the plan becomes a near impossibility after the battle begins -- especially if maneuver is involved. With a range far greater than most of the team's other weapons, the TOW is a particularly complicating factor for a team commander; in the defense, by the time most of his weapons can begin engaging the enemy, the stand-off range for the TOWs has decreased to the point where displacement is a necessity; the question is, will the team commander recognize the situation and react correctly? Attaching TOWs to teams is fine -- until the first shot is fired. I predict at this point that the TOWs will revert to the total control of the E5/E6 section/squad leader because the team commander will be too busy with a separate battle -- the close-in battle of which he personally is a part; he will be too busy coordinating close-in direct and indirect fires to integrate and maneuver long range systems.

The predictable distraction of the team commander in contact with the enemy may well result in destruction of the TOWs since the system cannot accept decisive engagement; it cannot survive, and it cannot be employed effectively in close contact with the enemy.

Human nature — the tendency of an individual under stress to react to (concentrate on) what is immediately at hand (what is in sight) — will determine that TOW sections attached or under the operational control of teams (OPCON) on a high intensity battlefield will be employed — if they are employed at all — by very junior (E5/E6s) leaders with only a vague idea of the team commander's concept of operation and even less idea of the task force commander's scheme of maneuver. Once a fight starts, the team commander will have his hands full with what he can see — the short and intermediate battle. And where are the TOWs? They will habitually be employed out of visual contact with the team commander; this will be dictated by most terrain, particularly in Central Europe, in order to give the system the elevation and attendant visibility necessary to maximize its range capability. I believe that it is entirely possible that the team commander will forget the TOWs entirely, for significant periods of time, but even if he does not, he will not devote the attention and consideration their capability demands. Though not intentional, the most potent, long range tank killer in US battalions today will at best be neglected and at worst, forgotten. The results are fairly predictable: enemy targets will not be serviced in the priority desired by the team or task force commander; long range AT fires will not be massed efficiently; TOWs will not be maneuvered in such a manner to remain protected from enemy fire because by the time a team commander in the defense determines that his

element must move in order to avoid decisive engagement, it will already be too late for TOWs to provide overwatch as repositioning commences.

All of the preceding discussion on command and control addresses the "easier" (from the standpoint of command and control) of the two major battle options — defense. In the offense, attaching TOW to teams makes even less sense. Here, if possible, the team commander is even more distracted and preoccupied. Not only must he coordinate all the direct and indirect fire systems, but also he must coordinate maneuver. TOWs in overwatch from a distant vantage point will be "on their own" after the battle is joined and for the same reason as cited earlier: the team commander will be overburdened; he will address what he can see; only the initiative and skill of junior TOW leaders will determine the TOW's contribution to the battle. In my opinion, the weapon system is too important to the US Army's success on a future battlefield to have its capability impaired by obsolete methods of employment — methods that advocate piecemeal, uncoordinated and decentralized employment.

TC 7-24 recognizes the need for fire control: "The control of fires in the defense against armor is of paramount importance because your anti-armor weapons are the keystone of your defensive effort."[5] On this there can be no disagreement; however, the manner of effecting this control is my point of divergence from the manual. The TC advocates decentralized control of AT fire and maneuver. I say human frailties will prevent this from being successful.

In "Division 86" the Army has recognized the necessity for a system specific organization and enhanced command and control for the TOW by creating a separate Anti-tank (AT) Company. It is a vast improvement over previous organizations since it incorporates requisite command and control assets — single mission company commander and platoon leaders

as well as command and control equipment. Under the previous TOE with one AT platoon, command, control and flexibility were limited, and in fact, this organization militated against centralized control and independent or separate unit missions for TOWs, due to the large span of control and only one platton leader. The new organizational concept has the potential to rectify these problems.

However, doctrine must be devised that will capitalize on the potential of both the weapon system and the new organization. Unfortunately, the new doctrine has not been produced. One of the most current doctrinal pamphlets for the separate AT company is the "High Technology Test Bed Operations Manual for Anti-armor Company," dated March 1981. Just like the 1975 manual, it states that "one or more anti-armor platoons will normally be placed under the operational control of the maneuver companies."[6] This manual perpetuates the decentralized doctrine that wastes assets and prevents the positive, centralized control at task force level that is necessary to maximize limited assets.

To eradicate the obvious doctrinal void, TOW literature must first cease to emphasize that decentralized control — attachment or OPCON of AT elements as opposed to retaining AT elements in general support or under task force control — is the "norm." Decentralized control is a method which wastes assets; it jeopardizes the survival of critical assets; and it places in peril our ability to win against massed armor. Why? Because as mentioned earlier, the "busy" team commander cannot effectively coordinate all the fires for which he is responsible.

The "normal" and recommended method of employment should be centralized control — in general support (GS) of the task force with the

company commander — the combat support company or AT company (Division 86) commander — controlling maneuver and fires; the AT platoon leader in the current TOE could perform this function, but because of his experience, the combat support company commander should perform better. However, whether the CSC/AT company commander or AT platoon leader commands is not the key point. The point is — someone, one person with specific knowledge of TOW employment and charged only with the AT mission — should be keeping tabs on as many of the TOW fires for the task force as possible. Centralized control ensures efficient employment of the limited number of systems and missiles available, and it ensures that they are not "forgotten" but are employed in accordance with the overall scheme of maneuver. TOW employment doctrine should advocate attachment or OPCON of systems to teams as an exception to the rule — not the norm.

Battlefield positioning of the commander of the centrally controlled TOWs is important because it may well determine the extent to which TOW fires are integrated into the battle plan. Because of its importance to the success of the plan, TOWs must be integrated into the planning and decision making process that determines how the task force will fight the battle. The best method of accomplishing this is to colocate the AT commander with the task force commander and Fire Support Officer (FSO) during planning and execution phases of a mission; the AT commander should perform the same function for anti-tank fire as the FSO does for indirect fire. The interaction which results will interject anti-tank fire support into the commander's estimates, decisions and concepts. This integration of AT fires into the task force fire plan will permit maximum utilization of the TOWs' potential combat power. In addition to planning, the AT fire support "cell" located with the TF

commander would also be charged with executing the plan, e.g. commanding and controlling the long range AT assets after the battle commences.

Here is how the AT cell at the TF tactical command post would function. In the planning phase, the concern focuses on how to use the TOW — the type and priority of targets to be attacked, when and from where. The AT planner would anticipate missions and situational changes and, therefore, be able to advise the TF commander as to optimum TOW employment. This process of integrating AT fires with indirect fires, other direct fires and maneuver is the best method to optimize the combat power potential of the system. Major functions of the AT planner would parallel those of a Fire Support Coordinator (FSCOORD): anticipate requirements, recommend priorities and positioning of assets, recommend targets to be attacked and timing, determine command and control measures, and safeguard assets from enemy fire.[7]

The AT plan must be detailed. The planner must consider the battlefield in depth and at all stages. In the offense, this will begin with firing positions overwatching the line of departure and extend along the entire route to and passed the objective. In the defense, it is not satisfactory to merely confine detailed planning to initial firing positions — as is the "norm" in most units today; the plan must encompass several primary firing positions — to enable each system to move after firing two to three rounds — as well as several bounds to the rear or laterally in case it turns out "to be a bad day." (Note that the term "alternate firing position" has been omitted in favor of "several primary positions;" the rationale for this will be addressed later.)

Following the planning phase, the AT commander would execute the

plan, e.g. direct the TOW assets in accordance with the task force commander's scheme of maneuver. Major functions in this phase include anticipating changes in mission and system positioning dictated by the current situation, recommending revision to plans, coordinating all TOW fires and safeguarding assets. This latter function is a major responsibility and one which the "busy" mechanized or tank team commander cannot perform with the singlemindedness of the single mission AT commander.

The argument will be made that this centralized control won't work without good communications, and on the modern battlefield, communications cannot be taken for granted. This is certainly true. However, no battlefield action will work as well without good communications. Even in current employment schemes, the TOW sections attached or OPCON to teams are totally dependent upon communication with the team commander. Without communications, the capability of TOWs in both the centralized and decentralized mode will be degraded. But in which mode will TOWs be more likely to contribute even with a somewhat degraded communication capability? I submit that the sections under centralized control will be more likely to have received a plan detailed enough to provide contingency actions for continuing the mission even in the absence of communications; additionally, the AT commander could seek face to face contact with his sections in the event of communications failure, an action not likely by a team commander responsible for a multitude of weapon systems and people; I predict that attached TOWs in the event of poor communications would be "on their own" and, thus, less likely to contribute to winning the battle than centrally controlled TOWs.

A fallacy in the decentralized doctrine is the perceived need for a commander to "see" his entire unit before he can effectively command

and control it. It is time we recognized the fact that, except in the desert, seldom will a commander, from company team up, be able to see even a fraction of his command; terrain and weather will prevent it, and the enemy acquisition means will dictate that our units conceal themselves. Those who have served in Europe recognize the limitations that terrain and weather impose on long range observation. Further, we need to recognize that a commander can still command and control his "invisible" unit — if he has anticipated this requirement and formulated a detailed plan which his subordinates thoroughly understand.

How is this done? One method is to use currently accepted control measures to organize the battlefield in a precise manner which ensures no possible kill zones are omitted, that all weapons are assigned to exactly defined sectors, and that engagement areas are precisely defined to facilitate changes in the plan and massing of fires. In most units today, if sectors are assigned and a few target reference points (TRP) are designated, leaders think they have a plan to control fires. They don't realize that the goal is to "grid" the battlefield using control measures. Only such a detailed organization of the battlefield can efficiently engage the multiple targets, in close proximity, that are likely in Europe.

Control measures which will perform this task are the same as those described in current literature: target reference points, phase lines and sectors. All of our literature contains explanations of these measures and how they are used to control fires.[8] A major deficiency is the fact that they are discussed separately — as if they are to be used independently of one another. Unless one studied the problem in depth — in far greater depth than our squad, section and platoon leaders and

company commanders are apt to — he would not recognize the necessity for employing the measures together — concurrently. The typical planning product by a TOW squad, section or platoon leader today is a range card reflecting sectors and TRPs; there is seldom a recognition of the absolute necessity for subdividing the battlefield into manageable segments that can be described quickly and clearly on the radio during the heat of battle.

By employing the aforementioned control measures together, "grids" or engagement areas are formed. The outside or lateral boundaries of the "grids" are formed by sector lines and the "top" and "bottom" of the trapezium are formed by phase lines. TRPs identify precise locations within the grids (engagement area) and are used to adjust fire within the grids. Judicious placement of these control measures along/on recognizable features create a "picture" that can be described by leaders and understood by soldiers — either face to face or on the radio. The picture, thus created, enables commanders to precisely adjust fires and optimize AT fires in accordance with the needs of the task force.

Before leaving this critique of doctrine, firing positions for TOWs must be addressed. Currently, doctrine repeatedly admonishes commanders to maneuver if they are to survive. The logic of this is obvious. Accordingly, doctrine prescribes three types of positions to be occupied by AT weapons: primary, alternate and supplementary with the primary and alternate positions oriented in the same direction and the supplementary positions oriented in a different direction. Here again, I believe our doctrine is deficient. Sufficient emphasis is not present to indicate that alternate positions are a matter of life and death. Instead, alternate positions are addressed not unlike an after thought.

This treatment of the types of positions ignores the universal tendency of soldiers to do the minimum — the minimum required to stay out of trouble, the minimum required to pass a cursory inspection, the minimum required to pass the ARTEP, etc.

When presented with the task of selecting primary, alternate and supplementary positions, the American soldier selects a convenient position which he designates the primary position, and only if pushed, does he select alternate and supplementary positions; for supplementary and alternate positions, "selects" usually means pointing in a general direction to a general area. Because of time constraints, lack of knowledge or lack of motivation, this common practice is seldom challenged by leaders.

The tendency to thoroughly plan only one firing position in training is guaranteed to result in a short life for TOWs on a battlefield. My suggested remedy for this deficiency is this: TOW doctrine should reflect two types of positions -- primary positions, with the plural of positions emphasized, and supplementary positions. Our soldiers and leaders must understand that they will be able to fire only a couple of rounds before they must move; this dictates that a plan be developed to service targets in one engagement area from multiple sites. The incentive to do this should be easy to "sell"; it is a simple matter of staying alive. Will merely deleting "alternate positions" from our lexicon accomplish the goal of ensuring that soldiers select multiple firing positions? No, not unless leaders enforce it. But, deleting "alternate" and making primary position plural should dramatize the necessity of the action sufficiently to get leaders involved in retraining our soldiers.

TRAINING

TOW training in the US Army is artificial, superficial, and devoid of imagination. At present, it is focused almost entirely on individual and crew skills. With the exception of gunnery, the training emphasizes mechanically oriented skills designed to maintain the equipment or to place it into operation. Neglected are those leader skills at squad, section, platoon and company levels that are critical to a successful mission. Crew and individual training alone will not accomplish the major training objective: engage and destroy enemy armored targets.

Training Circular 23-23 states that commanders and other training managers must ensure that two goals are addressed by training programs: train each crewman to perform his individual task, and train the crew as a team to operate and maintain the system.[9] Units in the field are doing this; unfortunately, most of them are doing nothing else. They are training crews to put weapons into operation on a sterile range with vehicles lined up, "dress right dress," and they are striving for 100% accuracy with the precious few live missiles allocated each year. The success of these TOW training programs are determined by one factor — hit percentage during live firing.

The methods for ensuring a high unit hit percentage are often ludicrous. Repeated boresightings and verifications of collimation after arriving at the firing site are the rule; practice tracking by the gunner immediately prior to firing is a "must." These drills contribute little to combat readiness, but they may be creating a false sense of security for senior commanders who read the accuracy statistics. The current TOW live fire range resembles the old known distance (KD) rifle range; any relationship to a future battlefield is purely coincidental.

Major units perpetuate this farce by setting artificial standards. For example, the following is typical of the training guidance given to TOW elements:

a. Conduct quarterly TOW trainer (M70) qualification for all unqualified TOW personnel.

b. Conduct monthly M78 qualification for designated gunners.

c. Conduct semi-annual formal evaluation of all crew members on TOW technical skills and crew drill.

This training guidance encompasses only a small portion of the field of knowledge that must be mastered by a proficient anti-tank unit. The goal to be sought by a well trained TOW unit should be the ability to provide effective AT fire support to the task force — for all of the missions a task force may be assigned. Training guidance must reflect this. However, as long as senior commanders set artificial, irrelevant standards and are satisfied with accuracy statistics regardless of how they were achieved, unit training will not improve. As long as training literature focuses entirely on mechanical tasks, our units cannot be expected to significantly improve.

TC 7-24 acknowledges that a predictable major cause of gunner error on the battlefield will be enemy suppressive fires.[10] A logical inference then is to ensure that gunners can track targets despite the sights and sounds that disturb concentration. An obvious requirement is to train gunners with radios chattering in their ears and artillery simulators exploding nearby because these distractions are realistic. Gunners must be trained under these conditions as opposed to a calm, sterile "KD" range.

Training literature must acknowledge the fact that although gunner

accuracy is important, it is meaningless if it is attained under conditions which will never be approximated on the battlefield. Gunners and crews must be trained under conditions which resemble a realistic scenario. Squad leaders must be trained to respond to platoon or section leader commands to shift fires and to pick specific targets out of a multitude of possibilities; the squad leader must then be capable of relaying fire commands to a gunner who is able to understand the command, quickly acquire the designated target, and accurately launch a missile; upon impact the squad leader must pick another target or order the vehicle moved; all these actions must be accomplished amid artillery simulation, smoke obscuration and radio interference. The crew that cannot perform under these conditions cannot assist in winning any battle against an armored threat; it will not survive long enough to make a difference regardless of whether the gunner had 100% accuracy on a "KD" range or whether every member of the crew had verified their "expert" status during the preceding quarter on the M70 trainer.

Rectifying these training deficiencies is relatively simple — it requires setting realistic training objectives and training as we expect to fight. We must outlaw "KD TOW Ranges," employ a tactical scenario similar to the one described above for each live firing and, habitually train gunners while the predictable sights and sounds of battle create a combat-like environment. The leader training described earlier as being missing is ideally suited to Tactical Exercises Without Troops (TEWTs); these exercises are cheap in terms of equipment, fuel and time and are easy to organize; they enable leaders to practice organizing the battlefield, selecting positions, giving and responding to commands to control fire, and maneuvering quickly with a minimum of orders.

EVALUATION

Predictably but unfortunately, evaluation of TOW units resembles the deficiencies of training doctrine: the focus is on individual and crew skills; leader skills are either largely neglected or examined in such vague, general ways that a realistic assessment of proficiency is impossible; and scenarios are not realistic. In the current AT platoon ARTEP, there is no specific evaluation of a leader's ability to: allocate assets to support assigned missions, plan for control of fire, and finally to actually control fire onto multiple targets.[11] There is no specific and detailed evaluation at present to determine if leaders have properly assigned missions to AT assets, e.g. centralized vs. decentralized control, attachment to a team vs. GS of the task force; if leaders have developed a plan which will permit the control of fires onto a "busy battlefield," e.g. one with many possible targets and one requiring a precise understanding and use of control measures; if the leader's plan will work, e.g. if subordinates understand and can correctly react to directions received during a simulated battle. In my view, specific tasks, condition and standards are essential for the following areas:

a. Formulate the AT plan. TOW fires are too important to the mission of the task force to be lumped together with all other direct fire weapons and assumed away under the maneuver plan. Neither does routinely attaching systems to each team and retaining some in general support (GS) of the task force suffice as an AT plan. The AT commander

must analyze the task force mission, terrain and enemy capabilities before recommending the assignment of missions and allocation of assets.

b. Control AT fires. A basic necessity is to articulate a plan for control which is clear, concise and understandable to subordinates. The plan must facilitate placing the fires of multiple TOWs onto specific targets scattered among a multitude of possible targets. Such a level of precision in target designation is an absolute requirement if the capability of the relatively small number of AT missiles is maximized.

c. Execution of the AT mission. The object here is to assess the leader's ability to execute the plan he has formulated. Unless his plan for controlling fires works, no leader can be judged effective. Watching the reaction of platoon, section and squad leaders to the fragmentary orders from a commander is the only true test of that commander's plan.

I have indicated the need for specific ARTEP evaluation of leaders for the simple reason that if it isn't stated as an ARTEP requirement, it will not be included in training programs. The reason for this is not because trainers are lazy, but rather they are inundated by training, maintenance and administrative requirements; they are advised to "train for the test," and that is exactly what they do -- no more. Therefore, it is imperative that specific leader requirements be stated in the "test."

The following task, condition and standards would significantly improve the capability of the current ARTEP. They address leader skills and are specific enough to accurately assess leader abilities.

TASK	CONDITIONS	STANDARDS
Plan Tow Employment	1. Unit located in tactical AA. 2. FRAGO from TF Cdr describes mission and area of operations.	1. AT Cdr organizes for combat. 2. Cdr's plan allocates AT assets IAW TF Cdr's scheme of maneuver and concentrates combat power in main ATK or on the major AA. 3. Considered choice is made between recommending GS of TF or OPCON to teams. 4. AT plt/sec ldrs specify control measures. 5. Phase lines, TRPs and sectors are integrated to create engagement areas that clearly delineate responsibility between plt/sec. 6. Multiple primary positions are selected.
Employ Effective AT Fire	1. Mission is GS to TF defending in sector. 2. During period of poor visibility. 3. Multiple enemy armored vehicle observed in TF sector. (Scenario should necessitate alteration of original plan by AT Cdr, e.g. Repositioning of assets. 4. Enemy indirect artillery fire received.	1. AT ldr adjusts plan as rqd. 2. FRAGO alters engagement area responsibility. 3. Subordinate ldrs are able to control engagements IAW FRAGO and original plan. 4. SL issue complete fire commands to gunners. 5. Gunners service tgts. specified by SL. 6. Fires are massed into areas designated by plan or FRAGO. 7. Systems use multiple primary firing positions during engagement. No more than two rounds fired before moving.

TASK	CONDITIONS	STANDARDS
Move to Subsequent Firing Psns.	1. Enemy has closed to 1500-1800 m. 2. Plt. ordered to move to subsequent firing Psns.	1. Subsequent positions and routes previously reconnoitered. 2. Movement coordinated so that continuous AT support to TF is maintained, and overwatch is provided to moving elements. 3. Sections move by bounds.

SUMMARY

This paper has identified a number of shortcomings in current TOW doctrine including employment, training methods and evaluation procedures. It is the author's firm belief that the deficiencies significantly degrade the potential effectiveness of the weapon system. Doctrine is viewed as flawed by the emphasis on decentralized assignment of assets and subsequent decentralized planning; obsolete doctrinal guidance has fostered a "knee-jerk" type reaction by commanders to automatically attach or OPCON TOWs to teams without considering the mission of the unit, the terrain, or the capability of the gaining team commander to effectively employ the system. Additionally, current doctrine fails to clearly explain the requirement to concurrently employ control measures to grid the battlefield into controllable segments and the absolute necessity to plan for and occupy multiple primary firing positions. TOW training programs neglect vital leader training and generally are unrealistic and artificial; a source of these problems is the tendency of senior unit commanders who set irrelevant standards and mistakenly pursue dubious accuracy statistics. Current evaluation procedures focus on individual and crew skills at the expense of an objective assessment of leader skills.

Correction of these potentially disastrous deficiencies must begin with revision of doctrine. Literature must require commanders to at least consider centrally directed planning and control. The suggested method is to assign the mission of GS of the TF to TOW units and to co-locate the AT commander with the TF commander to ensure the integration of TOWs fires and the TF fire and maneuver plans; centralized control can be effected by a thorough plan which employs various control measures used concurrently. After "fixing" doctrine, training must be broadened to thoroughly prepare TOW leaders to employ the system; realistic, all encompassing training standards must replace simplistic statements requiring periodic gunner qualification or verification; and most importantly, training as we expect to fight must be the minimum requirement, e.g. training amid the sights and sounds that inhibit concentration and complicate the tasks of leaders and crow members. And last, the suggested additions to training — leader training — as well as all other TOW training must be thoroughly evaluated under conditions which closely approximate a modern conventional battlefield.

It is my conclusion that the Army, especially infantry leaders, initially viewed the TOW system in one of two ways: with complacency since they saw it merely as an improved 106 recoiless rifle, or with trepidation. The first attitude dictated no change to accepted doctrine, training or tactics. The latter attitude was produced by the realization that the new system was complicated and might be difficult to maintain and employ; when TOW crews initially learned to maintain it and make it work, the "fearful leaders" breathed a collective sigh of relief and failed to get sufficiently involved in developing the requisite expertise to exploit the capabilities of the system by

modernizing doctrine, training and tactics; to make actual statistics match the "advertised PK," shortcuts and artificial measures were introduced.

The result of these attitudes is the fact that most TOW units today will be of little assistance against a sophisticated enemy. It is certainly not an irretrievable situation, but first the Army's commanders at division, brigade, and battalion levels must understand and admit the problem. They must get serious, use common sense, and most importantly, employ, train, and evaluate TOW units as if their lives and the success of their units in combat depend on it. They do!

ENDNOTES

1. TC 7-24, Anti-armor Tactics and Techniques for Mechanized Infantry, (USAIS: 30 September 1975), p. 2-2.

2. ARTEP 71-2, Army Training and Evaluation Program for Mechanized Infantry/Tank Task Force, (HQDA: 23 November 1981), p.3-742.

3. TC 7-24, op. cit., p. 2-6.

4. FM 71-2, The Tank and Mechanized Infantry Battalion Task Force, (HQDA: 30 June 1977), p. J-1.

5. TC 7-24, op. cit., p. 4-41.

6. High Technology Test Bed Operations Manual for Anti-armor Company, draft, (USAIS: March 1981), p. 1-4.

7. TC 7-24, op. cit., p. 2-15.

8. Ibid.

9. TC 23-23, Change 3, TOW Heavy Anti-tank Weapon System, (HQDA: 30 June 1977), p. 21.

10. TC 7-24, op. cit., p. 2-6.

11. ARTEP 71-2, op. cit.

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